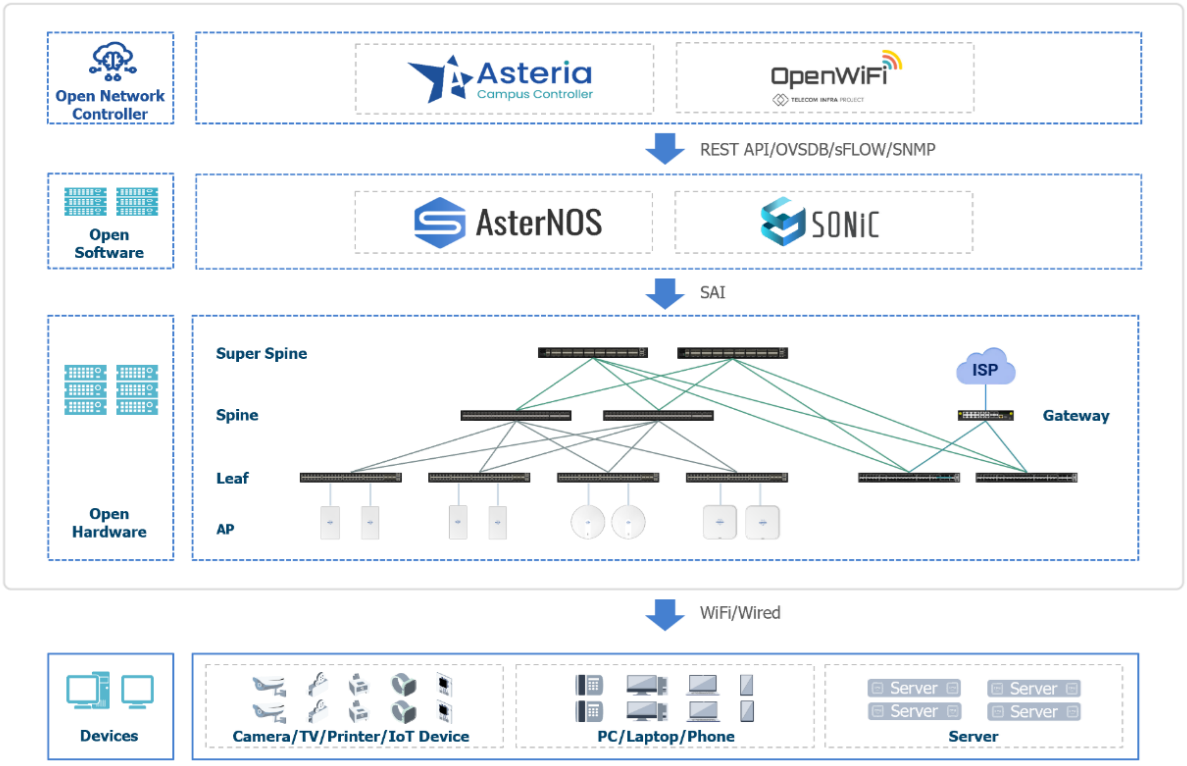
Asteria Campus Controller

Asterfusion TIP-based OpenWiFi Compatible Network Controller

Against the backdrop of accelerated digital transformation, integrated network management and control capabilities serve as the core support for the efficient operation of enterprises. Built based on the TIP OpenWiFi specifications and ecosystem, Asteria Campus Controller is a centralized management and control core that covers both **Ethernet + PON networks** and all **wired + wireless devices**. It can manage **APs, Switches, OpenLAN Gateways (OLG)**, and **OLT/ONU Stick** modules, enabling unified management across networks and multiple devices. It reduces costs through a standardized architecture and ensures efficient network operation through full-lifecycle management and control.



Core Architecture and Compatibility

Cross-network Compatibility: For the first time, unified management and control of Ethernet and PON networks are achieved, supporting status monitoring and configuration distribution of OLT/ONU Stick modules;

Multi-device Adaptation: Covers Asterfusion's own APs/switches, third-party OpenWrt APs, and OLG gateway devices, **breaking vendor lock-in**;

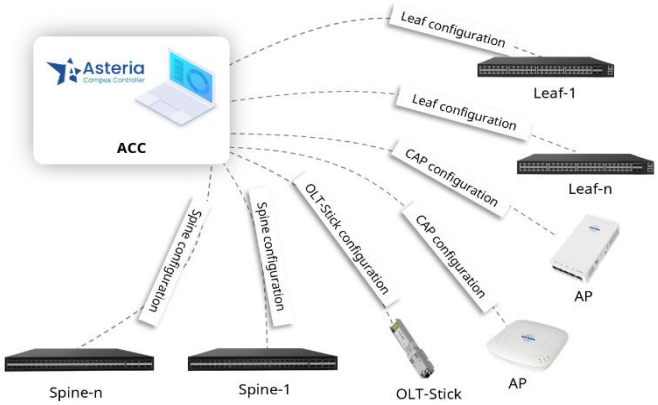
Protocols and Standards: Complies with the **IEEE 802.11** wireless standard and the **TIP OpenWiFi** architecture. Additionally, it supports key protocols like 802.1X for secure network access and BGP for advanced routing, enabling stable connectivity and interoperability in diverse environments.

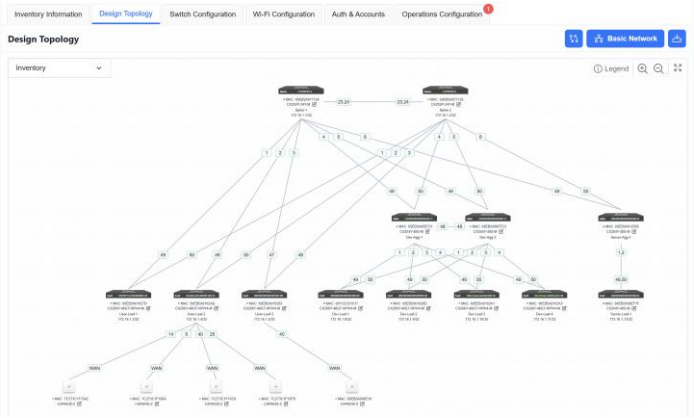
Zero-touch Deployment and Rapid Service Activation

ZTP Zero-Configuration Deployment: After the device is powered on, it automatically registers with the controller and pulls configurations without the need for on-site manual operations;

Preset Topology Templates: Built-in 4 types of typical networking templates (**Small/Mid-Scale Campus** / **Traditional L2 Network** / **Large/Mid-Scale Campus** / **Open Cloud Connect**), supporting pre-planned topology and configuration presets;

One-click Issuance of Wired/Wireless Services: Automatically generate basic, security, and authentication configurations for Super Spine/Spine/Leaf devices, as well as BGP/MC-LAG uplink configurations; Support configuration of AP's SSID, VLAN, and security services, as well as channel mode and width control for 2G/5G.





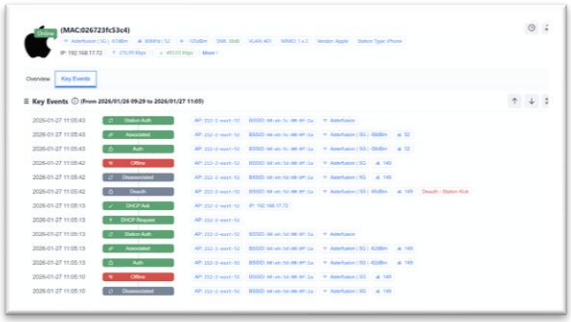
Multi-dimensional Unified Monitoring Dashboard

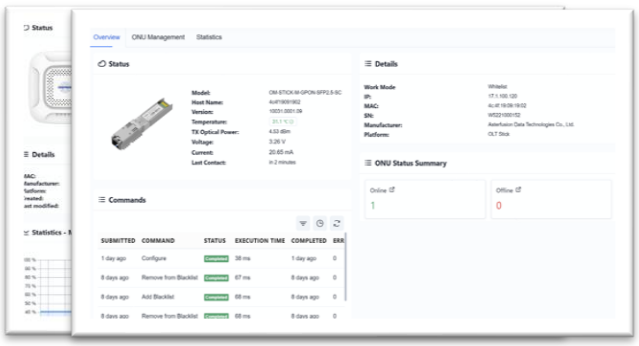
Entire Network Perspective: **Real-time monitoring** of egress throughput, alarms information, displaying high data rate APs, and number of clients and devices;

Device Diagnostics: **Device health score**, CPU/memory load, physical link/port telemetry, AP radio frequency (RF) performance monitoring, covering all devices including switches, APs, OLTs, and OLGs;

Comprehensive Clients Monitoring: Tracking terminal connection status, SNR signal quality, and online trend, displaying **key events in the entire lifecycle** of "access - authentication - DHCP - roaming - offline" on a timeline, and calculating event duration to assist in root cause location;

PON Network Perspective: Monitoring OLT Stick temperature, TX optical power, ONU Stick online/offline statistics, and configuration details.





Full-Dimension Alerting and Advanced Operation & Maintenance

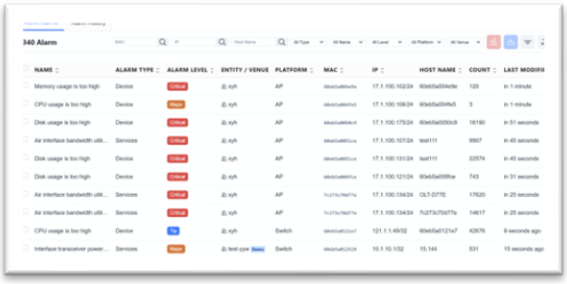
All-dimensional Alarm System: This comprehensive alarm system encompasses **device health**, **network performance**, and **protocol state**, covering metrics from hardware utilization to packet and RF anomalies.;

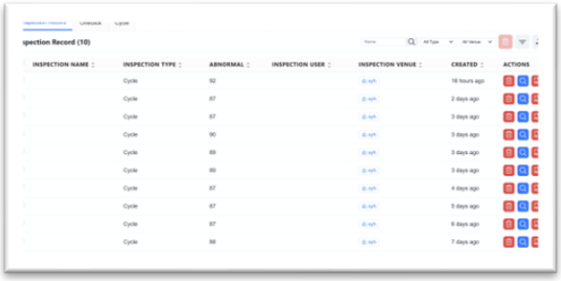
Flexible Configuration: Supports **custom alarm thresholds**, and push methods include emails and Webhooks (for connecting to third-party platforms);

Automated Operation and Maintenance: **One-click inspection:** supports system / service inspection, customizable cycles, automatic log collection and key process analysis;

Centralized Firmware Management: Create firmware through a remote URL, uniformly distribute patches and upgrades, and support custom scripts;

Controller Self-management: Supports UI / background dual-mode upgrade / patching, **built-in system logs** and NTP services to simplify its own operation and maintenance.





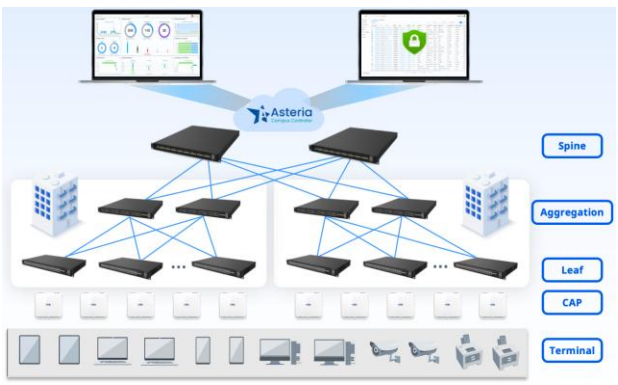
Built-in 3A Authentication and Multi-tenant Management

Secure Access Control (NAC + Built-in 3A): No need to rely on third-party licenses, with built-in AAA server and NAC system, supporting **802.1X**, **MAC seamless authentication**, **Portal authentication** (account password / OAuth 2.0), and custom Portal pages;

Multi-tenant Management: Based on a single 3A server and shared physical network, it achieves logical **isolation of tenants**, a hierarchical administrator mechanism ensures data invisibility, supports batch import/self-service user registration, and balances resource sharing and data privacy.

Security-Driven,Experience-First: The system implements granular network control through **Dynamic VLAN Assignment** and **Filter-ID** policy enforcement. To prioritize user experience, we utilize **Session Persistence** technology. This allows terminal devices to reconnect without re-authentication within a preset period, delivering a truly seamless roaming experience.

Open & Intelligent: Built on **Cloud-Native principles**, the platform offers a robust **RESTful API ecosystem**. This provides standardized integration for enterprise-level automated O&M (Operations and Maintenance), allowing for rapid synchronization with your existing IT infrastructure.



Network Overview

- Transmit Rate Statistics
- Operation Statistics
- Network Topology
- Multi-dimensional Quantity Statistics

Deployment

- Cloud Deployment
- Local Deployment

Auth & Accounts

- User Group
- User
- Network Access Service
- Block Access

Operations

- Active Alarms
- Alarm History
- Inspection Record
- Cycle Inspection

Management

- Multi-organization Management
- Multi-site Management
- User Management
- Asset Management

Device Management

- Basic Management Information
- Running Status Information
- Health Status Monitoring
- One-click Upgrade
- Remote Operation
- Configuration File Management

Business Configuration

- Strategy on the go
- Zero Configuration Start
- Full Network Automatic BGP
- Multi-layer Unified Template
- Configuration Template
- Unified Management of Wired & Wireless